

Remarks

Applicants gratefully acknowledge the acceptance of the replacement drawing sheets submitted with their previous response.

The Rejections of the Claims

Claims 1, 4, 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghosh (4,352,280) in view of Morse (3,551,952).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ghosh and Morse in view of Herdzina (5,277,047).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ghosh and Morse in view of Hammar et al (6,810,709).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ghosh and Morse in view of Mahoney et al (5,277,045).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ghosh and Morse in view of Herdzina.

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghosh in view of Morse.

It is respectfully requested that each and all of these rejections be reconsidered and withdrawn for the following reasons.

Reasons for Allowance of the Claims

Each of the above rejections is based on a combination of the Ghosh U.S. 4,353,280 Patent (hereafter Ghosh) and the Morse U.S. 3,551,952 Patent (hereafter Morse). This combination of patent disclosures is improper under Section 103(a) of the Patent Statute because there is no discussion in either Ghosh or Morse that suggests or invites the inclusion of text from the other patent. The only conceivable basis for seeking to combine the disclosures of Ghosh and Morse is found in applicants' claims and this is an improper basis for rejection of the claims. Finally, the combination of these patents still fails to disclose the "subject matter taken as a whole" of applicants' claimed invention.

Applicants' independent claims 1, 11, and 13 each describe an apparatus for hot gas blow-forming within a press. Each of these independent claims recites first and second forming tools that are separately heated, respectively, by first and second integrally heated heater plates. The heater plates are mounted to opposing members of a press. Each set of heater plate and forming tool is insulated. Each insulation enclosure member has a base portion lying between its heater plate and the adjacent press member. And each insulation enclosure has a perimeter wall surrounding its heater plate and at least a portion of its forming tool. Each independent claim requires that when the apparatus is closed a portion of one of the insulation enclosures fits within the other insulation enclosure. No overlap occurs when the apparatus is open.

Thus, the claimed apparatus permits the use of a relatively inexpensive press and forming tools which are not heated. Each forming tool has its own heater plate and insulation enclosure. When the press and apparatus are in the open position, the tools are easily accessible for maintenance or removal and replacement of the tool, or loading of sheet metal blanks and removal of large formed panels. But when the press and apparatus are closed there is overlap between the insulation enclosures for better management of heat loss and temperature control of the opposing forming tools.

In accordance with claims 4, 11, and 14, a perimeter seal is attached to at least one of the insulation enclosures. In claim 4 the seal mounts to the side of one of the insulation enclosures and seal against the top of the other enclosure. The location of the seal can be adjusted to accommodate forming tools of different heights. But there is overlap of the insulation enclosures only when the apparatus is closed. Therefore, the seal on the opposing insulation enclosures is affected only when the apparatus is closed. Again, when the apparatus is open, easy access is had to the tools. But when the apparatus is closed, the seal contributes to better thermal management.

Further, applicants' apparatus makes use of highly effective non-load bearing insulation in combination with load bearing spacers as recited in claims 5 and 11.

The combination of Ghosh and Morse fail to teach or suggest important claimed features of the invention recited in each of the remaining claims 1, 4-7, 9-11, and 13-14.

Ghosh does not disclose an apparatus for hot gas blow-forming in which separate insulation enclosures for separate opposing forming tools overlap when the apparatus is closed. Ghosh does not teach or suggest a seal on one insulation disclosure for sealing with the other

when the apparatus is closed. And Ghosh does not distinguish between load-bearing and non-load-bearing insulation. As stated in applicants' previous response to the Examiner's rejection, Ghosh's description of his apparatus in figures 2-5 is very limited. But clearly Ghosh does not describe an apparatus with sealed and overlapping insulation disclosures when the apparatus is closed. And Ghosh does not contemplate the use of a combination of non-load-bearing insulation with load-bearing spacers in a forming apparatus which is necessarily in a load bearing application.

The Examiner recognizes the deficiencies of the Ghosh disclosure even though the Ghosh disclosure is so brief and does not suggest any deficiency or any need for improvement. The deficiencies of Ghosh are not apparent until one considers applicants' invention. So without any suggestion in Ghosh for additional forming tool elements, the Examiner seeks another reference. But the only guide to finding such a reference is in applicants' claims. Without any lead from the Ghosh disclosure, the Examiner turns to Morse. Even so, the combination of Ghosh and Morse fails to show even the literal claim expressions of applicants' invention. And, certainly, the combination of Ghosh and Morse fail to show applicants' inventive "subject matter as a whole" as required by the patent statute.

Morse discloses a heat shielded press for an unspecified heated or cryogenic molding operation. Morse uses upper and lower heat shields 14, 15 that are always in an overlapped position whether the press is open (Figure 1) or closed (Figure 2). He shows heater plates 16, 17 but no forming tools. In Figure 2, Morse shows his press in a closed position with heater plates 16, 17 flat against each other as though the plates are also integrally heated forming tools. In Figure 1 (press open position) the heat shields 14, 15 are still overlapped with perpetual seal 51 engaged. An opened door 52 is illustrated in the lower heat shield 15 for "insertion and withdrawal of molds." Apart from heater plates 16, 17 no molds or forming tools of any kind are illustrated. And access to the press for adding forming tools or tools with insulation, or for adding sheet metal blanks to be formed (which may be large and cumbersome), or for removing formed products is limited to a window 52 in always-overlapping heat shields 14, 15. The Morse disclosure may have some value in some molding operations. But certainly Morse provides no teaching or suggestion of applicants' claimed invention taken as a whole. It provides no help in hot gas blow forming of large sheet metal panels of complex shape. And the Morse disclosure

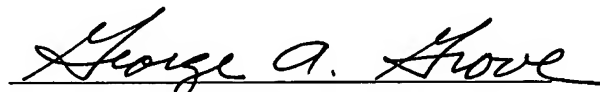
isn't even related to the Ghosh disclosure for many of the same reasons. How would Ghosh get his tools and parts through a Morse heat shield door?

Clearly any rejection of applicants' claims based on a combination of the Ghosh and Morse references is without any suitable basis under Section 103 of the Patent Statute.

The Herdzina or Mahoney et al or Hammar et al patents are combined with Ghosh and Morse in rejections of claims 5, 6, 9, and 11. But these rejections should also be reconsidered and withdrawn in view of the above analysis of Ghosh and Morse.

It is respectfully requested that the rejections of claims 1, 4-7, 9-11, 13, and 14 be reconsidered and withdrawn. These claims should be allowed and the case passed to issue.

Respectfully Submitted,



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